Hydrogen gas in general prevents the emission of spontaneous light, and also extinguishes it when emitted; but at the same time it does not hinder its quick revival when the subject of the experiment is again exposed to the action of atmospherical air.

The carbonic acid gas has also an extinguishing property; but in general the light will soon return if the subject of the experiment be replaced in the open air. Hepatic gas extinguishes spontaneous light much sooner than carbonic acid gas, and the light is much longer in returning when the subject is exposed in atmospheric air. Nitrous gas prevents the emission of light even to such a degree that a long subsequent exposure to common air cannot restore it. A vacuum suspends the emission of spontaneous light, but it returns immediately on the re-admission of air.

A few experiments on solar light, when imbibed by Canton's phosphorus, are here subjoined, from which we learn in general that this light is subject to the same laws with respect to the influence of heat and cold, as the spontaneous light of fishes, rotten wood, and glow-worms, of which an ample account is contained in the author's paper on this subject, already published in the Transactions.

Experiments on the Chemical Production and Agency of Electricity. *By* William Hyde Wollaston, *M.D. F.R.S.* Read June 25, 1801. [*Phil. Trans.* 1801, *p.* 427.]

The power of Professor Volta's pile to produce galvanism is now supposed to depend on the disposition of one of the metals employed, to be oxidated by the fluid interposed; but a doubt is still entertained whether that oxidation depends on electricity set in motion by the contact of the metals, or whether the electricity be excited by some chemical action of the substances used. The experiments described in the present paper seem to favour the latter opinion, viz. that a chemical agency is the cause of the effects produced.

They go principally to prove that this chemical agency of common electricity is the same as the power excited in Professor Volta's apparatus, likewise by chemical means. The production of airs by the electric pile is here imitated, and even the appearance of two currents is produced, by occasioning the electricity to pass by fine points of communication on both sides of the water at the same time, each wire yielding both hydrogen and oxygen gas.

It is also observed, that in the same manner as in Professor Volta's apparatus, there is manifestly a disposition to oxidate on the positive side alone; and that although oxygen gas be given as well as hydrogen by the negative wire, that wire is never perceptibly oxidated; while the positive one, when of silver, uniformly shows a stream of oxide proceeding from it. This is accounted for by the supposition that the difference between these two effects is owing to the greater intensity of common electricity in the method hitherto employed; and it is ultimately inferred that galvanism probably differs solely in quantity and want of intensity from common electricity.